he generally carries with him in his migrations. Wheat raising goes down to the Sudan as far as Timbuktu, Aïr, and a little north of Nigeria; but everywhere it has been introduced recently, due to the influence of the Arabs, who have not abandoned their traditional food.

Béchena is a food they adopted because of their exodus toward the Sudan; they are at the present time much closer to the Sudan than they are to North Africa from the point of view of material living conditions, that is, unless this plant formerly existed in a self-sown state in the Sahara, as Professor Chevalier has assumed, and was one of the principal food resources of its first inhabitants.

Fig. 29. Caravaneer's mortar and pestle.

By its agriculture and its production, the Sahara is completely Negro. Agricultural methods, except for irrigation, /231/ are borrowed from the Sudanese, especially work with the hoe (daba), while North Africa mainly uses the plow which is unknown in the intertropical zone.

Béchena is eaten as a cooked flour porridge, as raw flour, or mixed with liquids, water or milk.

Dates also play a large part in the diet of the Tuareg. Every year each family head organizes a little caravan to the Touat or Tidikelt to bring back two or three loads of poor-quality dried dates which are crushed with a pestle and eaten with camel's milk.

to extract all the water, and then dry them on /235/ small screens placed in the branches of trees. It goes without saying that cheese making is very rare in the Ahaggar and that the Tuareg make it particularly when they are nomadizing in the Sudan. Every year the Ihăggaren bring back large supplies of cheese from their stay in the Sudanese zone; these cheeses, dry as a bone, are either made by the Ihăggaren or bought from the southern tribes. They make an important contribution to the Tuareg diet. These dry cheeses are ground in a mortar and reduced to small fragments so that they have the consistency of flour. Then they are mixed with food, either in bĕchena gruel or in a drink of bĕchena flour and dates.

It might be supposed that meat plays a very large role in the Tuareg diet. But let us recall one of our old French proverbs which says that the shoemaker is always the worst shod. We could apply this adage to herders, who perhaps eat less meat than anyone else. A herder has animals for the use of their products, but he very seldom eats them, for each butchering is a loss of capital.

Indeed, the Tuareg kill their animals only under very unusual circumstances, especially at the time of religious and family festivals. These killings recall somewhat the religious meaning of sacrifices. This does not mean that they do not like meat, for when they raid a rival camp, they hasten to make drastic inroads on the smaller livestock and eat until they are about to burst.

Hunting furnishes them a little additional meat. Each year they kill a certain number of gazelles and wild sheep, eating part of the meat fresh and drying the rest to keep it on hand.

They capture star lizards (Uromastix acanthinurus), jerboas, gondi (Ctenodactylus sp.), sometimes even jackals and hares. We can add to their meat diet grasshoppers (Shistocerca gregaria), which they grill in the embers and then dry in order to pulverize them. All Saharian nomads are very fond of grasshoppers, and since remotest antiquity some North African tribes are supposed to

232 of the average resources of their country and never let their flocks
[272] exceed the number of head necessary for the milk needs of their
family -- about ten to twelve animals per person. The surplus is
[438] consumed or sold to the sedentary people in the agricultural centers.

/253/ The Ahaggar goats give very rich milk which makes
233 excellent butter. The meat, which is a little tough, is eaten boiled,
[234] and the hide is valued for making saddle bags, waterskins, and
[252] sometimes tents.
[262]
287

The ass. -- The Ahaggar Tuareg have many asses. They do
not breed them properly speaking, taking no care of them and letting
[232] them reproduce freely. Many Tuareg do not know the exact num-
[422] ber of asses they have, for they do not use them all and abandon
them in the mountains where they become more or less wild. The
young ones, born in the meantime, do not let anyone get near them,
and they must be trapped and then trained in order to be used.
137 These asses running loose, called haoulil by the Ahaggar Tuareg,
have given rise to a legend of wild asses. On this subject, Gautier
cited the adventure of General Laperrine who had a "wild" ass
hunted by his Arab horsemen, only to notice later that the animal
had been castrated.

Although there are no more wild asses in the Ahaggar, it is
[172] nearly certain that there were some. They were pictured in the
rock drawings of the Djorat wadi, and some still exist in Abyssinia
where they are called "onager."

233 The ass is very much at home in the Ahaggar. It is possible
[174] that it was domesticated there. The legends of the Iḥaggaren have
[173] kept the memory of the first inhabitants, the Issebeten, who had
only asses and goats.

In their short moves the Tuareg utilize asses to transport baggage,
442 and men and women also use them as mounts. The servants also
[312] take asses to replenish the water supply, making them carry the
[357] heavy waterskins on their backs or under their bellies.

The ass is never eaten, and its skin is not used.

The horse. -- The horse is not a Saharian animal. In 1929 there were four horses in the Ahaggar belonging to the aménokal. Today there are about twenty of them belonging to the members of his family or to the notables of his camp.

This is an expensive luxury, for these animals must be fed with barley, and there is not enough barley for the people themselves. It tends to replace the camel for the Sudanese Tuareg.

/254/ The zebu. -- A few years ago the aménokal owned a small herd of zebus which he had had sent from the Sudan. This animal is not raised in the Ahaggar proper, and it could not be, for lack of appropriate pasture.

The zebus serve in the agricultural centers by drawing water. They are furnished to the tenant farmer by the proprietor of the land, and they are very poorly fed on hardship rations of hay and grass, or else they are put in rush pastures, which are generally plentiful in the agricultural centers.

When the animal is tired, the owner exchanges him if that is at all possible. The privations which the zebus must undergo bring about their death in a relatively short span of time, and so in the Ahaggar it is a question of keeping them alive rather than raising them. In any case, they never follow the camps in their moves and never live near them.

When we talked about the camp, we told how the search for pasture directed its location.

Insofar as animal husbandry properly speaking is concerned, we observe that the small animals -- sheep, goats, and asses -- always stay in the Ahaggar and move with the camp.

As for camels, this is not the case; they are often put out to pasture far from the tents, watched only by a few shepherds. The majority are even kept in the Sudan 800 kilometers from their owners'

Wood furnishes containers for food, drinking vessels, milking vessels, mortars, pestles, tent stakes, crosspieces and boards for making saddles. The Ahaggar does not have more than five or six species of woods which can be worked, and the articles, very simply shaped, are much less varied than in the Sudanese tribes.

All Ahaggar women, noble or vassal, know how to tan, remove hair from, sew, decorate, and embroider leather. They are able to make a waterskin needed to carry water, prepare skins to make tents, and manufacture bags for transporting food and personal objects. They have all become so expert in these labors that it is

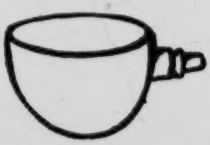


Fig. 47. Amoula, a little wooden "bottle" for young children to drink from.

difficult to find any other peoples in the world who possess such a developed leather craft.

The scarcity of vegetable materials in the Ahaggar is one of the reasons why the use of esparto is relatively restricted. Only the stems of a graminacea common in the wadies (Panicum turgidum) are used to make mats -- large enclosing mats which surround the tent, sleeping mats, mats for covering plates.

/278/ The stems are bound by little leather thongs, and the combination of graminacea and leather is extremely effective; it allows very regular geometric decorations at the same time as a very solid work.

There are no esparto vans among the Tuareg. The women use palm-leaf vans and hats, but these articles are the work of the Harratin from the little palm groves of Silet, Ideles, and Abalessa.

283 462 Spinning is done by all Tuareg women. They spin the hair of the goat, the camel, and the wild sheep, making very solid cords and saddle girths.

286 Weaving is limited to the making of goat's-hair, or more rarely camel's-hair, bags. This is a very primitive technique which does not require any loom and which is, furthermore, in the process of disappearing from the Ahaggar, where only a few noblewomen still practice it. It is completely extinct in Sudanese tribes.

324 438 Stonework, a relic of Neolithism, was still carried on in the Ahaggar a few years ago to make arm rings. Layers of granitoid schists were formerly worked at Aseksem and Terahart in the Tafedest. We also found an ancient workshop south of Silet on the banks of the Tamanrasset wadi. Today all stone bracelets come from Air and a few from Hombori, where they are manufactured by Tuareg or Hausa artisans.

[415 322]

Fig. 48. Tabarekkat wooden ladle, also serving as a drinking vessel.

326 [569] [135] Metalworking is exclusively in the hands of the Enaden, who transform silver, copper, and iron. These materials, with the exception of iron, do not exist in a native, workable state in the Ahaggar. But although iron ore is common /279/ in some volcanic rocks of their country, the Tuareg do not have it exploited, for it is found in such small particles that it necessitates a disproportionate amount of forge work for the quantity likely to be recovered. Nevertheless, the memory of casting ore still remains among the Enaden. They use several forges at once, but do not know the blast furnace. The caravaneers coming from the north or from the Sudan used to bring metals.

[439]

177 326 At the present time silver comes from coins which are melted. For years the Tuareg have had Maria Theresa dollars at their disposal; these

326 /280/ Silver is used to make jewelry--pendants, pendants for the [301] hair, bracelets, rings, earrings, amulet cases, etc.

Copper furnishes a number of more important and naturally more commonly used [492] articles -- saddlery [414] articles, cavessons for [412] camels, highly ornamented padlocks with keys, hair knives, etc. This metal is generally better worked than silver. It is often chiseled, engraved, and topped with applications of tin by a technique [531] which is reminiscent of damascening. Various articles, little knives, or medical cases bear inlays of copper on iron.

Fig. 50. Hammer.

325 Copper and silver are cast in little terra cotta crucibles, and the high temperature needed to melt them is obtained by a forge with a double hand bellows or with a single bellows of the kind used by the Saharian Arabs and the Sudanese.

Fig. 51. Blacksmith's tongs.

●438 The Ahaggar Enaden do not manufacture arms; 326 they merely repair them. Sahara, daggers, and 411 lances were for the most part manufactured by blacksmiths of the Kel Dinnik tribe (Ioullimmiden from Tahoua). Saber blades were imported from Rhat and mounted by the artisans. Lances came from the Kel Geres, where the Enaden of that group worked an iron mine which is located beside the village of Tassaoua.

Only a few daggers were made in the Ahaggar.

323 Pottery is in common use among the Tuareg. It is generally not in use among nomads. However, it has been widespread in the [172] Sahara for a long time, for quantities of potsherds and fragments are found on the regoliths /regs/ which are subsequent to the Neolithic period. Furthermore, its use is becoming more and more generalized in the camps.

323

Pottery is made by Negresses, the wives /281/ of Harratiñ, or freed former captives who live in the agricultural centers.

This outline of the techniques and industries of the Kel Ahaggar Tuareg brings out their poverty.

438 531 517

Can we speak of art among the Iḥaggaren? That seems difficult, for aside from a few rare objects, all those that they use are more or less in use in the Ahaggar are imported from Aïr or Ădrar des Ifôras, and that is explained all the better by the fact that the artisans are more or less originally from these regions.

[415]

Fig. 52. Sugar tongs.

177 517

It is difficult to determine the origins of Tuareg art in general. It is in reality a composite art taken from all their neighbors, which, is not, for the most part, the achievement of the Tuareg themselves but of their artisans. It is among the latter that the distant origins /of Tuareg art/ must be sought.

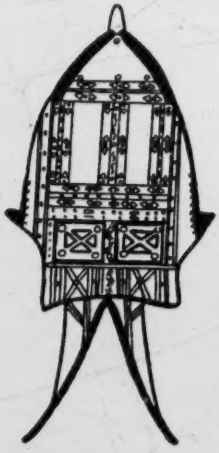
517 [178 172]

The tastes of the Tuareg appear to be unchangeable. They have been fixed for centuries; therefore, in ancient documents some hundred years old one finds the same shape, the same dimensions, the same coloring as today. In this regard we shall say that the Enad is not an artist. He is a worker who may have taste, but who is, on the whole, incapable of creating. He faithfully reproduces the model which has been handed down to him. He

492 The tarik is the saddle commonly used by the Ahaggar Tuareg, the one which is peculiar to them and which they must have known from time immemorial. The tamzak, which is a decorated variant [177] of the tarik, owes the origin of its decoration to Hausa influence. [171] In fact, the peculiar technique of applying perforated metal bands enhanced by colored leather fabrics is found in horses' saddles of the

[531]

Fig. 54.. 1
The camel saddle called tamzack.



2
Detail of the back of the saddle.

Hausa from the Damergou, Sokoto, etc., and there is no doubt that that art, which is unrelated to that of the Tuareg, is much more developed among those peoples.

438 The two saddles are usually made in Aïr, indeed even at Agadez, but the old Tuareg blacksmiths manufacture only the 326 tarik. The tamzak is the work of artisans, who are usually settled 492 at Agadez and more or less crossed with artisans of Hausa origin. 492 Ahaggar blacksmiths make only the tahiast, which is the saddle 171

usually satisfied with milk, "akh, " fresh ("akh oua kefaïen" 264
[illegible]) or sour ("akh iezza", [illegible]), at
the hour when the camels, sheep, or goats come in from
pasture.

The basic food of the Ahaggar Tuareg consists of bechna, 262
"inelli" (white-grain sorghum, Graminaceae), dates, "teïni, "
and milk, "akh." [illegible]

But their country provides them with many resources 22
which they are careful not to neglect, especially the poor, 556
the "tileqqiouin" [illegible] , who constitute the majority.

All the "imr'ad" go to harvest the grains of "toulloult" 243
and "afezzou." Women, children, youths, negroes and 221
negresses go into the wadis
to gather the harvest, which
takes place from May to June
for "toulloult" and from July
to the end of September for
"afezzou." /29/

[000]

Dautheville

Idelès (Koudia)

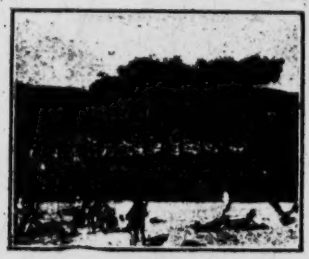
Usually, before the
harvest several wadis are for-
bidden territory, and camels
are not led there until the
harvest is finished.

The produce is gathered
and put into hide sacks. After the grains have dried, they 252
need only to be put onto small trays of "afezzou, " called
"tissiin, " which are shaken, and the hulls fall off and remain
on top. The grains are ground to powder, and a kind of gruel
is made with water or butter.

The Tuareg are also very fond of "tikamarin" [illegible] 234 252 262 438
, cheeses as hard as wood which they get from Aïr. They
grind them in mortars and mix them in their food.

They very seldom eat meat, except that of game which 262
they can kill in a hunt: gazelles, mountain sheep, and 224
antelopes. But often they prefer to smoke this game in order 251 438
to go and sell it in the Tidikelt.

The nobles eat better, at least those who are well-to-do. In the Ahaggar especially they own cultivated land in the "ar'erems" (villages), where they grow wheat, "ired," barley, "timzin," and bechna, "inelli"; but usually they sell their



Dautheville

Trees Called "Ahatés" (Acacia Albida) at the Tillemas of the Tessht Wadi (Koudia).

wheat and barley to the natives of the Tidikelt and are content with bechna, of which they are very fond. They claim that bechna is less heating to the stomach than wheat or barley.

The rich allow themselves the luxury of drinking tea, but tea and sugar are very expensive, and they do not misuse them. On the other hand, they do not hesitate to beg for them shamelessly.

When the year is bad anything seems good to the poor to assure their subsistence. In such years one sees them eating /30/ "berdi," or "taheli," (Typha angustifolia, Typhaceae); ground carob seeds of "talhas," or gum trees, which they call "tahaha" • ⁝ ⁘ + ; "tanékfa'lt (Diplotaxis duveyrierana, Cruciferae); fruit of the "teborak" (Balanites aegyptica), which they steep to take out the bitterness; and even leaves of the "aremmas" (Atriplex halimus, Salsolaceae), which they boil.

In short, nature keeps food resources for them which prevents even the poorest from dying of hunger.

edible, and considering also that there is a very fine palm at Abalessa (which could become a splendid oasis since there is no lack of water), one may ask if the creation of an oasis of palms in the Ahaggar might not be tried with success. But the Ahl Azzi and all the inhabitants of the Tidikelt, who live entirely on the sale of their dates to the Tuareg, have persuaded

Haratine Gourbi at Ideles
(Koudia)

the latter to the contrary, that the climate of their country is not suited to growing palms. Besides, the Ahaggar do not in the least wish to undertake plantations from which one could expect no profit for several years, and they prefer to stay with growing wheat, barley, and bechna, which pay at once.

The Amenokal Moussa ag Amastane, realizing that the era of raids will soon be ended forever, sees that it will be necessary to demand from the soil the means of subsistence which raids formerly procured. So he has announced his intention of having a foggara dug at "Endid" and of having gardens made there, and his example will very probably be followed. This is an undertaking which will certainly be encouraged and supported, and which shows the slow evolution which is beginning to take place among the Tuareg, in the best interests of peace and civilization.

5: Nicolaisen E-4, 5 (1951-1955) 1959
MS25 Tuareg MS25
Ahaggar
Air

262 [222] Even when grazing is good stock-breeding products are less important for food in Ahaggar than in Air as is illustrated in fig. 3 depicting the relative importance of milk food and vegetable food. A small part of the vegetable food is provided by collecting seeds of grasses and herbs, while roots, stems, and berries of wild plants are less significant. The bulk of Tuareg plant food consists of millet, barley, wheat, and dates. In Ahaggar many Tuareg have gardens with wheat and barley cultivated [241] [563] for them by black-skinned agriculturists generally known by the Arab word *Haratin* (*Izzegaren* to the Tuareg). But most Ahaggar Tuareg acquire the bulk of •438 their plant food from caravan trading with the oases of Tidikelt (dates) and with 262 Sudanese villages as far south as Zinder (millet). Even in years of drought they can obtain millet from the Sudan in exchange for rock-salt broken at Amadror, north-east of Ahaggar. In Air caravan trading with salt seems less necessary to Tuareg subsistence, although there are also in this country Tuareg who trade with salt from Amadror or Bilma. Most pastoral households however have a fairly regular [234] surplus of livestock, butter, and cheese which can provide for the necessary amount [563] of millet bought in Agadez or south of the massif in Damergou. There are also 241 in Air a great many negroid agriculturists from whom pastoral Tuareg can buy 262 vegetable products. But millet, which forms the prominent part of Tuareg plant [438] food, is grown to a very slight extent by the agriculturists of Air. Dates are important in particular to the Ahaggar Tuareg who acquire large quantities from the oases of Tidikelt. There are also a few Ahaggar clans the members of which own half-wild palms with dates of an inferior quality, as there are Tuareg who have a few palms growing in their garden plots. In Air dates are not so important for food but even there pastoral Tuareg may have some palms. Among the Tuareg of Tassili-n-Ajjer it is very common for pastoralists to sow wheat and barley in the river valleys when these have been heavily flooded (Nicolaisen 1954, p. 83, 88), and this primitive agricultural method was apparently known also to the Ahaggar Tuareg in the past (Duveyrier 1864, p. 372). More recently many pastoral Tuareg [312] of Ahaggar and Air have taken up agriculture by means of irrigation. There seems [221] to be a tendency towards semi-nomadism among the Tuareg who are very dependent on vegetable food derived from agriculture.

The Negroes Of The Sahara.

136 In the above section on Tuareg ecology it is stated that Air climatically and botanically is closely linked with the Sudan. This is true also zoologically as the Air fauna contains a great many species of birds and mammals characteristic of tropical Africa. The bird life of Air seems very akin to that of the Sudanese savannah, and, for instance, guinea fowls are extremely common even in valleys of the northernmost parts of the massif. As examples of tropical mammal life in Air we may here mention that the wart-hog lives in Central Air, and that oryx antelopes

[TEXT CONTINUES ON p. 76]

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

tions have remained important to the Ahaggar Tuareg, and it is clear that they would not go on trading were these expeditions not profitable, for trading expeditions are extremely strenuous. Though the expeditions set off when the extreme heat is decreasing, it is still very hot in the extensive barren plains in autumn and in winter during daytime. Water and pasture are often extremely scarce in this deserted country, and the Tuareg frequently have to travel rapidly. For days or weeks they live so to say on their camels, and if camels are not too heavily loaded they may do up to 16 hours a day for several days in succession. Under such journeys the Tuareg eat only once a day. Obviously such trading expeditions are also very hard on the pack-camels, and there is always a risk of loosing a camel during such journeys through barren, desert country.

In this brief outline of caravan trading I have not considered those Ahaggar Tuareg living constantly in the Tamesna plains and adjacent regions. These Tuareg own more livestock than the Tuareg of the Ahaggar Massif, and I do not believe that they engage so much in extensive trading expeditions. They are comparatively rich in she-camels which are favourably good milk yielders in these regions most of the year, and milk is more important as food there than it is in Ahaggar. I believe that most Ahaggar Tuareg of the Tamesna region acquire their necessary vegetable products by selling surplus livestock, butter and cheese at the markets of Ingal and Agadez.

CARAVAN TRADING OF THE AYR TUAREG

Among the Ayr Tuareg stock-breeding products are far more important for food than in the north. Grazing conditions are better with annual pasture as a recurrent event, and the Tuareg keep bigger flocks of goats and sheep, larger camel herds, and most have a few zebus which are guarded without much difficulty. The *Kel Ferwan* Tuareg of Southern Ayr can live on milk for a large part of the year, though they, like those of Ahaggar, become tired of milk drinking if they get no solid food. There are Tuareg of Southern Ayr who live exclusively on milk for two or three months during the periods of *akasa* and *ɣarat* and to whom milk is important as food for at least six months. In the extremely hot season of *ɛwilen* when milk is very scarce most Tuareg eat millet porridge with a little milk or sauce (cf. p. 242 f.), and Tuareg who are not very wealthy eat millet porridge to a great extent all the year round, so that the necessary amount of millet for many camps is about 0.5 kilo a day per person, or about 180 kilos a year. In Ayr there are fairly good possibilities of collecting if there are not too many locusts, but most Tuareg do not collect a great quantity of wild seeds, and claim that they would be very badly off without millet, as seeds of wild plants are not very nourishing in comparison. In one year during the second world war (in 1943) they say that millet was very hard to get; it was then very difficult to subsist and a great many animals had to be killed for food. Millet is almost indispensable to the Tuareg; they also consume other vegetables derived from agriculture, notably wheat, maize, and dates, but millet is the most essential non-nomadic food product. Normally it can be acquired by most Ayr Tuareg without much difficulty.

The people of Ayr obtain their provisions of millet from the Sudanese area of shifting cultivation, notably from Damergu (Tanut). Millet can also be bought at Agadez whereto it is brought by Tuareg

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

by the Tuareg of Ayr, the *Kel Geres*, and other Tuareg. The Tuareg obtain salt generally in exchange for millet, but they also bring with them dried meat, and meat from animals newly slaughtered; and although this meat is largely rotten when it arrives at Bilma it is easily sold to the oases dwellers who are yearning for meat. The oases dwellers have little to subsist upon but dates of which they have a surplus. This is purchased by the Tuareg, who get two loads of dates for one load of millet. The Bilma trade is less important nowadays than it was at the beginning of the century. In 1922 the Bilma caravans comprised about 7000 camels (Buchanan 1926, p. 83), while in 1908, when the trade was already decreasing, caravans numbered about 20,000 camels (Abadie 1927, p. 292). Caravans still go to Bilma to fetch salt and dates, but the salt trade is not so profitable to-day when Bilma salt can be bought fairly cheaply at Agadez, as the trucks bringing provisions from Agadez to the French administration and to the merchants of Bilma, take salt back with them when they return. The Ayr Tuareg do not organize their trading expeditions within family groups or sections as in Ahaggar. A Tuareg who does not want himself to go to Bilma may let a kinsman or a friend trade for him with his camels. The payment for this is a large loaf of salt which constitute one sixth or one seventh of a camel load.

The Ayr Tuareg do not generally obtain salt from the pits of Tegidda-n-tésemt though this place is not very far from the Massif to the west. They say that the Tegidda salt is not as good as Bilma's. The salt of Tegidda-n-tésemt is purchased mainly by the *Iwillemmeden Kel Dennek* when visiting the regions around Ingal after the rains. Some of the *Kel Ayr* who live in the extreme north (the *Kel Tédalé*, and others) occasionally go to Amadror in the north to fetch salt which is taken down to the Sudanese towns and villages. In years when drought prevails in Ahaggar these Tuareg take their surplus of livestock to the market at Tamanraset, for in dry years the provision of meat, butter, and cheese consumed in Ahaggar come mainly from Ayr and adjacent regions. When I stayed in Ahaggar in 1954–55 a great many Tuareg of the *Kel Tédalé* came to Tamanraset to sell camels, donkeys, sheep, goats, and zebus, and also brought with them large quantities of cow's butter and cheese. The route followed from Northern Ayr to Ahaggar runs via I-n-azawa and I-n-abeggi which are the only wells between the two mountain massifs. Water is very scarce and so is pasture, which is mainly limited to a scattered vegetation of annual plants; over very large areas there is no vegetation at all. It is easy to drive camels and donkeys through these regions, while more difficult for sheep, goats, and cattle. The zebus easily get cut hooves from walking on stony ground, while sheep and goats suffer much from thirst. In spite of this, all kinds of livestock can be driven through the barren desert from Ayr to Ahaggar, even as late as the month of March which is extremely hot in the barren desert country. The Tuareg frequently lose animals which die from thirst and hunger during the journey, but the trade is nevertheless extremely profitable as prices of livestock are high in Ahaggar in dry years, while prices of European goods such as tea, sugar, cotton, metal vessels, and the like are extremely low compared with the prices asked for these goods in Ayr.

The Ayr Tuareg, though owning more livestock than the Tuareg of Ahaggar, have a certain demand of agricultural food products. These products are mainly grown outside of the Massif, for the farmers of Ayr grow little millet, very few dates, and part of the wheat grown in Ayr is exported to the oases of Ganet and Rat in the north. Though these vegetable products can be purchased at Agadez, it is profitable to fetch them where they are cheap, namely in the Sudan (millet) and in Bilma (dates). And

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

added that wars were not confirmed to fighting between these large political groups, for there was also fighting within these groups at intervals.

The Ayr Tuareg had as their main enemies the Tebu, the Eastern *Iwllemmeden* and the Arab pastoralists of the Tawa district. In Ayr there were also sharp disputes between various drum-groups of the Ayr federation, notably between the *Kel Ferwan* and the *Kel Faday*. The *Kel Faday* Tuareg frequently joined forces with the *Kel Dennek* in fighting the *Kel Ferwan*.

Throughout the 19th century there was a risk of severe trouble everywhere in the Sahara with adjacent regions, but caravan trading was most important to Tuareg subsistence at that period in spite of these latent conditions of hostility.

Great caravans then crossed the desert carrying gold, ivory, ostrich feathers, and slaves from the Sudan to the Mediterranean, and south-bound caravans traded with salt and Arab and European goods. The Tuareg had their important part in these large trading expeditions, and they traded with their surplus of livestock and stock-breeding products much in the same way as they do nowadays. They acquired dates and millet from the sedentary farmers who were in constant need of meat, butter, cheese, and the like.

The organization of caravan trading among the Ahaggar Tuareg was different in the past. To-day the normal trading units are tribal sections, and this was probably also true in pre-European times, but these trading units did not travel independently as they do nowadays. Several tribes of the same drum-group travelled together under the leadership of a noble Tuareg of the dominant tribe of their chiefdom. When the Ahaggar Tuareg had no severe disputes with the *Ulad Ba Ḥammu* who dominated the Tidikelt oases, they traded with their population of sedentary farmers much as they do nowadays. They brought livestock, butter, dried meat, and Sudanese goods which were bartered for dates and Arab goods. The Ahaggar Tuareg also traded southwards, but they say that they did not go further south than Agadez, as it was considered dangerous to penetrate too far into the Sudan. They also say that they did not trade with salt until a few years before the arrival of the French, and that the important trading object before that time were donkeys, of which there was a shortage in Ayr. All this seems to agree with Duveyrier's statement that the salt deposits of Amadror were not utilized in his time owing to insecurity, though he says that the deposits situated on the caravan road from Wargla to Agadez had formerly been mined (Duveyrier 1864, p. 143 f.). As to the caravan trade of the Ayr Tuareg, I believe that it was very much as it is nowadays, comprising trading expeditions to the millet-growing Sudan and to the Bilma oasis. It is most possible that the Ayr Tuareg also then travelled in larger units to protect themselves and their goods, for the *Kel Ferwan* Tuareg say that in the past camps were always bigger than to-day, as a camp consisting only of three to five tents could not defend itself against raiders.

It is known that the slave trade was carried on until the arrival of Europeans and in certain parts of the Sahara even later. Both the *Kel Ahaggar* and the *Kel Ayr* claim that they engaged in slave trading until it was abolished by the French authorities. However, it seems as if the Tuareg never engaged in this trade to the same extent as the Arabs. This is stated by Bissuel in regard to the Tuareg of Ahnet who bought their slaves from the market of Timbuktu. In general they kept these slaves for their own use, in contrast to the Arabs of Tidikelt who traded with slaves on a very large scale (Bissuel

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

butter in Ahaggar, and butter reserved for greasing the hair is frequently kept in a large horn (*isek*) of barbary sheep (Fig. 165).

The Ayr Tuareg make butter (*wiji*) in much the same way as the Northern Tuareg. For churning they use a skin bag (*anwar*), or a calabash (*azemu*), and they say that they prefer skin bags in winter, and calabashes in the hot season. Butter is heated or boiled immediately after churning, but the Ayr Tuareg do not add parts of plants, date flour, or the like. In Ayr butter is not churned as regularly as in the north. It is used mainly for cooking meat of thin animals, for a sauce which may be used for millet porridge instead of milk (cf. p. 243 f.), and for greasing the hair. Among the Northern Tuareg butter is added to many different dishes and particularly to bread, which is eaten almost daily by many people. In years of drought the Ahaggar Tuareg get their butter from Ayr (cf. p. 212, 215), and the Ayr Tuareg make much butter for export in such circumstances. They churn most butter from cow's

Fig. 154a–c.

a. Wooden funnel. Made by blacksmiths. Ahaggar, the *Dag Rali* tribe. Dimension: 0.146 m high. (N.M. G. 5203).
b. Funnel consisting of a piece of calabash which derives from the south. Ahaggar, the *Dag Rali* tribe. Dimension: 0.131 m high. (N.M. G. 5202).
c. Wooden funnel with a strap of cord of goat's hair. Made by blacksmiths. Ahaggar, Olufsen's collection. Dimension: 0.175 m high. (N.M. G. 1.150).

All wooden funnels are cut from wood of the *takarekkar* tamarisk (*Tamarix aphylla*).

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

camels. This blood never constitutes a proper dish to the Tuareg. They bleed camels to drink their blood only when they lack water on journeys in the desert. Bleeding is done according to the method described above, and the blood is collected in a drinking bowl. But the Ayr Tuareg say that they work up the mass of blood with the fingers with the result that the upper part of the amount of blood becomes more liquid, though it is always red in colour.

The Tuareg use the following implements to make cereals or other vegetable products into flour:—

(1) A large wooden mortar (*tindé*) with a heavy pestle (*éheṛen*) (Fig. 177). It is used in all camps and villages of Ahaggar, Tasilé-n-Ajjer, and Ayr, and is in fact known all over Tuareg country. It is used mainly for pounding millet and sorghum, but it is also employed for pounding other cereals, including certain wild seeds, and for dates, cheese, meat, locusts, and the like. These large wooden mortars are manufactured by the blacksmiths of Southern Tuareg country, including Ayr, where most Northern Tuareg obtain their mortars. Among the Northern Tuareg there are also other mortar types. A small mortar which like the former rests on a foot and is known by the same name (*tindé*) (Fig. 178), is used mainly by sedentary agriculturists for pounding rock-salt, dried tomatoes, tobacco for chewing, and other plants or materials to be used in small quantities. Another type of mortar without a foot and known to the Northern Tuareg as *akabar*, or *takabart*, (Fig. 176) is found mainly among pastoralists who use it on journeys for pounding millet.

(2) A saddle quern (*telust*) (Fig. 179), which consists of two natural and in general unfashioned stones, is found in most camps of the Northern Tuareg. This constitutes the only grinding implement for wheat, barley, and certain wild seeds among the *Kel Ajjer*. The stones used for saddle querns are sharpened at intervals with a hard stone or some other hard object (*tasettekut*) in order that they may grind effectively. A simple saddle quern (*asar*) is also known to the Ayr Tuareg, but it is less common there than in the north.

(3) The handmill (*tasirt*) (Fig. 181) is not a traditional implement of Tuareg culture. It is widely known all over Northern Africa both by Berbers and Arabs, by sedentary peoples and nomads living in black tents. It has been introduced to Ahaggar mainly by the immigration of the Arabic speaking Harratin (Izeggaren) of Tidikelt,

Fig. 169a–c. Pieces of butter-milk cheese (*awles*, pl. *iwlasn*).
a. Ahaggar, *Harratin of* Abalessa. Dimension: 0.066–0.068 m in diameter, 0.022 m thick. (N.M. G. 5816).
b. Ahaggar, the *Ajuh-en-ashkil* tribe. Dimension: 0.062 × 0.022 m. (N.M. G. 5817b).
c. Ahaggar, the *Ajuh-en-ashkil* tribe. Dimension: 0.058 × 0.016 m. (N.M. G. 5817c).

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

412

Fig. 206a–d. Axe and adzes of the Ahaggar Tuareg.

a. The ordinary axe (*tasfeft*) which is found in all Tuareg camps. Ahaggar, the *Aǧuh-en-tehlé* tribe. Dimension: 0.572 m long; dimension of the iron blade: 0.157 m long, 0.053 m broad. (N.M. G. 5233).

b. *tattawt*, a small socket-shafted adze with knee-shaft. Adzes of this type are common in Tuareg camps. They are used mainly by women for wood-carving. Ahaggar, the *Aǧuh-en-tehlé* tribe. Dimension: 0.301 m long. (N.M. G. 5232). [322]

c. *tikadimt*, adze shafted by means of a piece of sheet-iron and nails. Ahaggar, blacksmiths of Abalessa. Dimension: 0.440 m long; dimension of the iron blade: 0.150 m long, 0.058 m broad at the edge. (N.M. G. 5864).

d. *tikadimt*, slot-shafted adze. Ahaggar, blacksmiths of Tamanrasset. Dimension: 0.430 m long; dimension of the iron blade: 0.222 m long, 0.065 m broad at the edge. (N.M. G. 5865).

The axe and the adzes are all made by blacksmiths. [564]

The very best ropes or cords manufactured by the Ahaggar Tuareg are those made from goat's hair which is sheared with a knife by the women once a year in the hot season. These ropes are known to the Ahaggar Tuareg as *ihellumen* (sing. *ahellum*), while the proper term for a rope of goat's hair in Ayr is *ázaw*. But the Ayr Tuareg do not make such ropes as they have goats of the short-haired breed (p. 33). They obtain their ropes from the Ahaggar Tuareg. Ropes of goat hair are manufactured by women by the following method:— The mass of hair, known as *éhafilen*, is placed upon a piece of skin and is prevented from blowing away by means of a stone. The hair is then taken out in small quantities with the first and second fingers of the left hand to be spun upon a stick 30–40 cms long.

[text continues on p. 266]

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

may be seen in Fig. 167a–b illustrating baskets used for the manufacture of butter-milk cheese in Ahaggar. True coiled basketry is sewn with a little awl (*tisteni*) (Fig. 218a).

The technique of coiled basket work is used in the manufacture of a great many receptacles among the Tuareg of Ahaggar, and coiled basketry made and utilized by these Tuareg can be seen in Figs. 184, 185, 196a–c, 210a–b.

The Ayr Tuareg apparently do not make coiled basketry to a very great extent, but they know a technique related to that used in Ahaggar, and also sew with a small awl (*éstan*). The reason why so many Ayr pastoralists make very little coiled basketry work probably lies in the fact that plates, bowls, and other receptacles of this type can be obtained at the market of Agadez at very low prices.

In the manufacture of plaited basketry the Ayr Tuareg are experts. They use the leaves of the dum palm for plaiting a great many different articles such as tent-mats, containers, and the like. When large mats and similar objects are made, the palm leaves are always plaited into narrow bands which are sewn together with pieces of leaves by means of a large needle (*tasubla*) (Fig. 220b). Plaiting dum palm leaves is one of the most important tasks of women among the *Kel Ayr*. Pastoral Tuareg of Ahaggar in contrast to those of Ayr do not engage much in plaiting basketry, and I believe that most of them are unaware of this technique which is known to all sedentary agriculturists of Ahaggar. The plaiting material used by these people is date palm leaves (*aǧum*) from which they make mats, bags, and similar objects. Baskets (*alegutguten*) like that reproduced Fig. 211 are manufactured by sedentary agriculturists of Abalessa and are sometimes used by pastoral Tuareg. Another type of plaited basket is that illustrated Fig. 135. It is made from palm leaves and has two handles made from palm bast twisted into a rope which is sewn into the basket by means of the large needle (*tasugla*, or *tasubla*) (Fig 220b). This basket type (*tésenit*) is widely found throughout Northern Africa among sedentary people of the oases and in the Atlas. The sedentary agriculturists of Ahaggar use baskets of this kind for many different purposes, and they play a part in agricultural work, e.g., to carry fresh soil to the gardens (p. 191) and to remove soil when digging and cleaning out foggara canals.

The Tuareg have a third technique which can adequately be mentioned in connection with plaiting, namely the manufacturing of mats from the stems of the *afezu* grass (*Panicum turgidum*). These mats are made from straws placed parallel to each other and fixed together by means of strips of leather. These mats are known as *éseber* or *tésebert* according to their use and size. They play an important part in Ahaggar where they are used as a kind of windscreen surrounding all tents, and they are manufactured by many women among the *Kel Ahaggar* (Figs. 268, 269). Mats of this type are also made by some Ayr Tuareg for cheese manufacturing (Fig. 168), but Tuareg women of Ayr practise very little this particular technique of mat making. Large mats made from *afezu* stems are used for bed covers, and in rare cases also for windscreens or sunshades, but these mats, which are found in all Tuareg camps together with the large wooden bed (*tédabut*) (Fig. 212a–b), are not manufactured in Ayr but in the south, particularly by women of the *Igdalen* Tuareg. Mats manufactured by this method are used for an interior cover of the barrel-vaulted mat-tent (Fig. 265d); these mats are also imported from the south.

The Tuareg are expert at skin and leather work which constitues the most important craft in the

7:Nicolaisen E-5 (1951-1962) 1963 M825 Tuareg MS25

l'homme, nos. 41.19.1376 & 1377). A skin skirt suspended from the shoulders by means of two leather straps also occurs among the *Iwillemmeden Kel Ataram* around Meneka and Gao (cf. Nicolas 1950a, Fig. 38,7 p. 169, p. 176).

In case of severe cold a simple hairy skin mantle may be worn by both men and women of the Northern Tuareg. These mantles are not very common nowadays, when most Tuareg use woollen blankets introduced from the north, but they are still worn by vassals, slaves, and sedentary agriculturists of Ahaggar. A skin mantle is known as *aglim* and it frequently consists of a single sheep-skin worn over the back with hair inside (Fig. 240). But there are also larger mantles composed of several hairy goat-skin and/or sheep-skin sewn together with leather thread by means of a little awl (*tistemi*). These larger mantles are attached around the upper part of the body by means of a leather cord around the neck (cf. Fig. 241). Skin mantles are said to be unknown in Ayr, and literature makes no mention of them in other Tuareg groups.

Garments made from skin or leather are nowadays rare among the Tuareg. But the Tuareg, like many other peoples who have given up the use of skin and leather for dress, still use this material for foot-wear which comprises various types of sandals.

The common type of sandal used among the Tuareg is known as *tyatimen* (sing. *tyatim*) which word is also used more generally for sandals of other types. It is made from the hide of oxen and sometimes of hides of the orys antelope or giraffe whose hides are considered superior for sandals. It is not manufactured by the Tuareg but by sedentary peoples of Agadez and other towns in the south. The Northern Tuareg, like the Tuareg of Ayr, generally procure their sandals from Agadez where the type is also known by the Hausa word *takelmi*. The manufacture of such sandals is described in detail by Lhote, who states that the untanned hide to be used for soles is treated in the following way:— (1) Beating with wood against a flat stone; (2) Softening in wet sand; (3) Continued beating with wood against a flat stone; (4) Greasing with butter, tallow, or fatty vegetable substances; (5) Continued beating in order that the fat may penetrate into the pores of the hide. A sandal is made from two layers of hide thus prepared and covered with a tanned piece of sheep-skin which is dyed and decorated. These three layers are sewn together. The sandal is finally provided with a leather strap to pass between the first and second toes, and this strap again is connected with a broader band of leather sewn to both sides of the hind part of the sandal so that the band supports the instep (Fig. 242b). The reader is referred to Lhote's study of sandals for further information about their manufacture (Lhote 1950d, p. 514 ff.). The *takelmi* sandals are excellent for many purposes: They are easily pulled off and put on which is advantageous to camel riders who ride bare-footed but frequently dismount, and then need their sandals put on quickly because of the burning sand and rocks. The very broad soles of this sandal type is also very advantageous not only as protection against the burning soil, but also against the numerous acacia thorns lying so to speak everywhere in the river valleys. But the Tuareg do not wear sandals of this type just because they find them practical and efficient. They also wear them because they are considered more beautiful in shape and colour than other sandal types made by the Tuareg themselves. Among the Ayr Tuareg a particular type of sandal is plaited from dum palm leaves. According to Lhote this plaited sandal is known as *silisleplatine* (Lhote 1950d, p. 522, Fig. 10 p. 521, pl. XXII Fig. 1). I have never heard it called this, the name I

[text continues on p. 300]